CIE Committee TC 2-17 Solar Radiation
Minutes of meeting held on 28 June 2006, Toronto, Canada

Chairman Zerlaut called the meeting to order at 8:05 AM. The following is a list of those in attendance.

Gene Zerlaut	SC International, chairman of committee TC 2-17
Joe Robbins III	AZ Desert Testing
Norma Searle	Consultant
Kurt Scott	Atlas MTS
Oscar Cordo	Atlas MTS
Gary Cornell	Q-Lab
Warren Ketola	3M

The agenda was approved as presented.

Background information:

Chairman Zerlaut provided a brief background presentation on the mission of CIE Committee TC 2-17. This included a review of the presentation about the work of the committee given at the CIE annual meeting in Lyon, Spain, and updates on information provided by those who have responded to the request for input for the work of the committee, but who could not attend (Christiaens Francois of L'Oreal and Steve Ellersick of Boeing) There are several possible applications where the work of this committee could be very important. These are:

Weathering
Solar loading
Solar utilization technologies (e.g. photvoltaics, thermal)
Erythemal effects
Window systems applications

Chairman Zerlaut presented information comparing the spectra developed with SMARTS2 version 2.9.2 to the spectra defined in CIE publication 85. The SMARTS2 spectra were developed using the same atmospheric inputs used for the CIE 85 tables. In general the absolute differences were less than 1% at all wavelengths. In addition, the SMARTS2 spectra showed much better resolution. SMARTS2 extraterrestrial spectra shows good agreement with published extraterrestrial spectra (ASTM E490 and CIE85) solar spectrum. ASTM E490 is a composite of many extraterrestrial solar spectral measurements.

Key issues:

Which version of SMARTS2 to use. The SMARTS2 version used to generate the ASTM G173 and G177 spectra has been archived by ASTM (v2.92). Newer versions have been written. Version 2.9.5 has been published. If CIE uses V2.9.2 and employs the same

input parameters as used to develop ASTM G 173 and G 177, this will essentially be a copy of ASTM G 173 and G 177. CIE Publications must either obtain ASTM permission to use this version, and must reference these standards, or must direct users to the ASTM documents in lieu of publishing identical tables.

O. Cordo moved and K. Scott seconded a motion to use the SMARTS2 algorithm for developing all standard solar spectra. Motion approved unanimously.

J. Robbins III moved and W. Ketola seconded a motion to petition ASTM subcommittee G3.09 to update ASTM G173 and ASTM G177 using SMARTS2 v2.9.5, and request that ASTM archive v2.9.5 once the revisions are published. Motion approved unanimously.

Which applications to consider – weathering, solar loading, erythemal, solar thermal, window system performance

It was generally agreed that four task groups should be formed initially. These are:

Weathering
Erythemal (sunscreen) effects
High altitude simulation issues (aircraft)
Solar loading (automotive, architectural applications)

What atmospheric conditions and geographic inputs are to be used to define the spectra for specific applications?

The committee must be a resource for providing solar spectral information to groups based on THEIR inputs for what atmospheric and geographical conditions are important to them. The TC 2-17 committee must also create task groups for specific applications whose. Additionally, the TC will create a mathematical tool for evaluating the spectral match, or goodness of fit, of candidate simulators to the standard solar spectral conditions developed by each task group for their selected atmospheric/geographical inputs. It is also important for users to select spectral integrals or bands appropriate to application. The issue of selecting spectral bands that match spectral measurement capabilities will be an item for future consideration. For example, if full-spectrum spectroradiometers are used, the above mentioned tool will be developed to facilitate spectral match criteria (i.e., to define good match). Broad band integrals can allow good match to total in each integral but with poor spectral match.

Scott moved and Cordo seconded a motion to create task groups whose job it is to provide atmospheric and geographic input parameters that will be used with the SMARTS2 v2.9.5 to develop solar spectra for their specific applications, and to select application-appropriate band passes for their specific applications. Motion passed unanimously.

Zerlaut moved and Cordo seconded a motion to require main committee to be responsible for updating the Tables in CIE Publication #85 using the inputs appropriate to each table of CIE 85 with the SMARTS2 v2.9.5. algorithm. Motion passed unanimously.

Future meetings:

It is recognized that a large percentage of deliberations will have to be done by correspondence as opposed to holding a number of physical meetings. We will also look into the possibility of holding "virtual" meetings via teleconference, internet, or via other appropriate methods.

It was recognized, however, that a meeting should be convened outside of the United States as soon as possible. It was agreed that the next meeting would be in Europe – the chair agreed to arrange such a meeting in Europe at a venue that it will make it easy for Europeans to attend as well as representatives from the USA who can travel. Target is February or March 2007.

Chairman Zerlaut requested that all members provide a list of potential participants in the work of the committee.

There was no additional business and the meeting was adjourned at 11:40.

Respectfully submitted,

Warren D. Ketola